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ABSTRACT

This study examined trends in teacher candidates' educational beliefs over time. Participants were 84 teacher education candidates enrolled in several sections of an introductory-level education class for education majors at a southeastern university. They were administered the Witcher-Travers Survey of Educational Beliefs (WTSEB) both on the first day of class and at the end of the one-semester course. Low scores on the WTSEB indicate a proclivity toward transmissivism, high scores suggest a tendency toward progressivism, and mid-range scores indicate an eclectic philosophy. Participants were also asked to identify, to rank, and to define between three and six characteristics that they believed effective teachers possessed or demonstrated. A paired-samples t-test revealed a statistically significant increase in WTSEB scores. The effect size associated with this increase was .29, suggesting a moderate increase. By the end of the course, candidates, on average, demonstrated a more progressive orientation. A multiple regression analysis, using the posttest-pretest difference educational belief scores as the dependent variable, revealed that teacher candidates who believed that ethical behavior was a foremost characteristic for teachers to possess tended to experience the greatest shift toward progressivism. (Contains 25 references.) (Author/SM)

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Trends in Teacher Candidates' Educational Beliefs

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Abstract

The present study examined trends in teacher candidates' educational beliefs over time. Participants were 84 teacher candidates enrolled in several sections of an introductory-level education class for education majors at a southeastern university. Participants were administered the Witcher-Travers Survey of Educational Beliefs (WTSEB) both on the first day of class and at the end of the one-semester course. Low scores on the WTSEB indicate a proclivity toward transmissivism, high scores suggest a tendency toward progressivism, and mid-range scores indicate an eclectic philosophy. Participants also were asked to identify, to rank, and to define between three and six characteristics that they believe effective teachers possess or demonstrate.

A paired-samples *t*-test revealed a statistically significant increase in WTSEB scores. The effect size associated with this increase was .29, suggesting a moderate increase. Specifically, by the end of the course, candidates, on average, demonstrated a more progressive orientation. A multiple regression analysis, using the posttest-pretest difference educational belief scores as the dependent variable, revealed that teacher candidates who believed that ethicalness was a foremost characteristic for teachers to possess tended to experience the greatest shift toward progressivism. Implications are discussed.

Trends in Teacher Candidates' Educational Beliefs

An issue that has received increased attention over the last two decades is that of teacher beliefs. The importance of this issue is exemplified by the fact that the second edition of the *Handbook of research on teacher education* (Sikula & Guyton, 1996) devoted an entire chapter to this topic. Richardson (1996) summarized the extant literature and provided a rationale for the importance of this topic in initial teacher preparation. She provided two reasons to justify why teacher education programs should include a focus on teacher beliefs in the curriculum. First, most current programs are built upon a constructivist theory, requiring candidates to continually examine their beliefs, attitudes, understandings, and conceptions. As part of their goals, teacher education programs should provide teacher candidates with activities that help transform unknown or unexamined beliefs about the educational process into beliefs that can be both articulated and evidenced. Second, beliefs are important in the instructional process as teachers make decisions about content and pedagogy. Thus, teacher preparation programs should assist teacher candidates in evaluating their beliefs in relation to what candidates identify as favored classroom practices.

Richardson (1996) provided a useful distinction between belief and knowledge. This author described belief as "a proposition that is accepted as true by the individual holding the belief. It is a psychological concept and differs from knowledge, which implies epistemic warrant" (p. 104). Also, Richardson noted that the "perceived relationship between beliefs and actions is interactive. Beliefs are thought to drive actions; however, experiences and reflection on action may lead to changes in and/or additions to beliefs" (p. 104). Fenstermacher (1979) has long advocated that teacher preparation programs should help future teachers identify and reflect upon their tacit beliefs about teaching, learning, and curriculum.

Evidence is substantial that candidates enter teacher education programs with beliefs that affect their learning in formal courses and subsequent behavior in field settings. For example, Lortie (1975) concluded from his historic study that teacher candidates enter their

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professional education programs with a set of beliefs about the nature of teaching based upon their own experiences as students. Somewhat consistent with this result, Knowles (1992) found that family influences and experiences with previous teachers were important factors in how preservice secondary teachers viewed their roles as teachers. Clift's (1987) comparison of English majors not interested in teaching and English majors who completed student teaching as part of their certification program revealed significant differences in perspective. In particular, English majors who were not interested in teaching saw the teacher as the authority for interpreting literature whereas those expecting to teach were more constructivist in their orientation. Both Black and Ammon (1992) and McDiarmid (1990) found evidence to suggest that many teacher candidates are oriented toward a transmissive approach to teaching. Similarly, Hollingsworth (1989) found evidence that candidates entering teacher education programs have strong beliefs that teachers should be transmissive in their approach. Furthermore, Hollingsworth noted that, over the course of time and although all candidates stated a belief that students construct learning, teacher candidates differed widely on how strongly they actually accepted this position.

A transmissive approach, sometimes referred to as a traditional or conservative approach, reflects one of two major educational viewpoints that have emerged and present themselves in contemporary American public schools; the other viewpoint is that of progressivism (Doll, 1996). These two belief systems are in opposition to one another regarding aims of education, educational practices, authority versus freedom, and the uses of subject matter. Doll states that "traditionalists" espouse "what has been done in the past has been done well, therefore, we should hold on to it in the future," but noted that the "progressives" implore us to "look critically at past actions and practices to see what now can be done differently to make learning more satisfying and effective" (Doll, 1996, p. 36).

According to Morris (1961) in his profile of the transmissive and progressive viewpoints, those of the conservative stance believe that the needs of the community and student are relatively constant; therefore, they are reluctant to revise, modify, or redesign the schooling process. In contrast, those with a progressive viewpoint generally are eager to match school programming to contemporary needs in order to make education meaningful and relevant to the interests and abilities of students. At times, the curriculum and programming of the school seem to be undergoing continuous change and revision.

Finally, the term transmissive is sometimes used to denote belief systems in which the teacher, the one who knows, transmits important knowledge to the student, the one who does not yet know. Examples of transmissive philosophies and theories include idealism, realism, and essentialism. In contrast, the term progressive is used to denote the notion that students must be active learners whose own personal and social experiences are important to the educational process. Examples of progressive philosophies and theories include naturalism, experimentalism, and constructivism.

The Witcher-Travers Survey of Educational Beliefs was developed by Witcher and Travers (1999) to assist preservice and inservice educators in assessing their tendency toward either progressive or transmissive educational beliefs. The authors note, however, that their instrument is not intended to promote the notion that one viewpoint is better than another. Rather, its fundamental purpose is to encourage reflective thinking and decision making regarding educational theory and practice.

Since being made available on the Allyn and Bacon website, many teacher candidates and their instructors have used the Witcher-Travers scale for diagnostic purposes. With the exception of the various validation studies conducted on this instrument, scant formal empirical

research has been undertaken using this scale. Recently, however, Minor, Onwuegbuzie, and Witcher (in press) used the Witcher and Travers' (1999) scale to study the prevalence of transmissivism and progressivism among 134 teacher candidates. These researchers found the following distribution: 28.4% of the participants were categorized as transmissive, 12.7% were classified as progressive, and 59.0% were deemed to be eclectic. With regard to the large proportion of eclectic participants, Minor et al. hypothesized that, as teacher candidates become more aware of a multitude of teaching philosophies through their educational courses and their field experiences, many of them will lean more toward progressive or transmissive tendencies. Unfortunately, these investigators did not test this hypothesis. Rather, they recommended that future research investigate how stable teacher candidates' perceptions and educational beliefs are over time. This was the purpose of the present study. Specifically, the current inquiry sought to examine trends in teacher candidates' educational beliefs over the course of one semester, after taking an education course designed for entry-level teacher candidates. Also of interest was whether teacher candidates' perceptions of characteristics of effective teachers predict changes in teacher beliefs over time. It was hoped that findings from this study would help educators realize that teacher preparation institutions need to consider the influence that candidates' entering beliefs and attitudes have on their subsequent development and to attend to these beliefs and attitudes as a deliberate part of preparation. Certainly, structuring programs in this manner would facilitate assessment of the extent to which these programs are meeting the Interstate New Teacher Assessment and Support Consortium (INTASC, 1992) standards of developing teachers as reflective practitioners who continuously assess their own dispositions, beliefs, and decisions and the effects of these choices and actions on both their students and practices in the classroom.

Method

Participants

Participants for this study were 84 teacher candidates attending a large university in Georgia who were purposely selected from three sections of an introductory-level education class entitled Survey of Educational Concepts. These three sections were taught by the same instructor. The course provided an introduction to the concepts, practices, and issues of the teaching profession and the public schools. Most of those enrolled were traditional college students in their freshman and sophomore years of study, but some were nontraditional students returning to college for teacher certification or to complete their degrees. This was the first education course for the vast majority of the students. The conceptual framework for the course was based on the INTASC (1992) Standards and course objectives including but not limited to the following: (a) Examine political, financial, legal, and ethical issues in education; (b) describe characteristics of effective schools and teachers; (c) identify the multiple factors that influence curriculum, instruction, learning, and assessment; (d) define multiculturalism and identify cultural and community diversity issues; (e) discuss how educators accommodate diversity in learners, programs, and schools; and (f) examine personal goals, attitudes, and capabilities and construct a personal philosophy of education.

A variety of assignments were required for successful completion of the course. These assignments included a written critique of an article from a refereed education journal, an individual presentation, a group presentation, reflections of reading assignments, active participation in class activities, exams, and the development of a professional portfolio.

Participation in the study was voluntary and participants were given informed consent forms to sign. The majority of the sample was female (84.3%) and White (75.3%). With respect

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to year of study, participants either were freshmen (13.9%), sophomores (62.0%), or juniors (24.1%). Nearly all participants (97.6%) were full-time students. In order of popularity, the students represented the following majors: English/journalism (19.0%), health (11.9%), history/social studies (9.5%), mathematics (9.5%), music (9.5%), speech pathology (9.5%), kinesiology/physical education (9.5%), art (4.8%), business (4.8%), science (4.8%), counseling/psychology (2.4%), and reading (1.2%).

Approximately one-half (i.e., 50.7%) of the teacher candidates intended to teach at the kindergarten and elementary school levels, with 12.3% desiring to teach at the middle secondary school level, and the remainder (37.0%) wanting to teach at the high school level. Nearly half (45.9%) of the participants preferred to teach in a public school in a rural area, one-fourth (29.7%) wanted to teach in a public school in a suburban area, and 21.6% expressed a desire to teach in an urban public school.

Instruments and Procedures

During the first week of the class, participants were asked to complete the Witcher-Travers Survey of Educational Beliefs (WTSEB) and the Preservice Teachers' Perceptions of Characteristics of Effective Teachers Survey (PTPCETS). The WTSEB, which was developed by Witcher and Travers (1999), contains two parts. Specifically, the first part extracts demographic information (e.g., gender, age, year of study) from the sample members. The second section contains a 40-item, 5-point Likert-format scale. Respondents are requested to react to statements by selecting one of the following five possible choices: *SA = strongly agree*, *A = agree*, *U = undecided*, *D = Disagree*, or *SD = Strongly Disagree*. Of the 40 items, 20 statements indicate a transmissive view and 20 statements reflect a progressive view of education. These two labels are used only to organize statements and to indicate ideas about education that have existed for years, as opposed to ideas that have a more recent genesis. Sample items that represent a transmissive viewpoint are (a) "The focus at the elementary school level should be on the acquisition of well-defined skills and subject content" and (b) The school's major societal function is to teach youth to read, write, and compute well at all grade levels. Sample items that indicate a progressive orientation are (a) "There is no 'ideal' sequence for subject presentation" and (b) "There are many roads to the acquisition of knowledge; reading is certainly one important avenue among others."

According to Witcher and Travers (1999), the WTSEB can be completed in approximately 15 minutes. Responses are scored by computer, with possible scores ranging from 0 to 40. Higher scores (i.e., greater than 23) indicate interest in progressivism, whereas lower scores (i.e., less than 17) indicate a transmissive vewpoint. Scores occurring in the range of 17 to 23 suggest an eclectic viewpoint. Witcher and Travers (1999) further note that the terms "higher" and "lower"do not denote values of superiority or inferiority.

During the development of the scale, the WTSEB was mailed to a random sample of 70 Arkansas public school superintendents. Superintendents were requested to complete and to return the survey within a period of two weeks. Two months later, a second copy of the survey was mailed to those superintendents who responded to the initial mailing. Again, superintendents were asked to complete and to return the survey within a two-week period of time. A total of 65 superintendents participated in completing both the pre- and post-tests. These paired responses were recorded and compared for the purpose of obtaining a test-retest reliability index. A coefficient of .63 was noted by the authors (Witcher & Travers, 1999).

As recommended by many researchers (e.g., Onwuegbuzie, in press; Onwuegbuzie & Daniel, in press-a, in press-b; Thompson & Vacha-Haase, 2000), reliability coefficients always should be reported for the data at hand. Unfortunately, no reliability information was available

for the WTSEB because the responses made by each sample member were scored electronically. In the current investigation, the WTSEB was re-administered to the participants during the last week of the semester.

The PTPCETS asks participants to identify, to rank, and to define between three and six characteristics they believe effective teachers possess or demonstrate in general. Because responses to the PTPCETS are open-ended, information about reliability was not appropriate. The PTPCETS was administered only at the beginning of the semester.

Results

The means and standard deviations pertaining to the WTSEB scores are presented in Table 1. A paired-samples *t*-test revealed a statistically significant increase in WTSEB scores. The effect size associated with this increase was .29, suggesting a moderate increase. Specifically, by the end of the course, students, on average, demonstrated a more progressive orientation.

Insert Table 1 about here

A chi-square analysis test of homogeneity also was conducted to determine whether the proportion of teacher candidates falling into the transmissive, eclectic, and progressive categories changed over the two administrations. A statistically significant difference in proportions falling into the three groups was found, $^{2}(3) = 24.04$, $p < .001$. The effect size associated with this difference, as measured by Cramer's *V*, was .38, again indicating a practical significance of a moderate size. In particular, of teacher candidates who were classified as eclectic at the pretest stage, 19.2% were categorized as progressive at the end of the course. Additionally, of those who fell into the transmissive category at the pretest stage, 67.7% were categorized either as eclectic (61.9%) or progressive (4.8%) at the end of the course. Thus, the chi-square findings were consistent with the dependent *t*-test results.

A phenomenological analysis (Goetz & Lecompte, 1984) of the PTPCETS responses was used to examine the responses of participants regarding their perceptions of characteristics of effective teachers. Specifically, as advocated and described by Onwuegbuzie and Teddlie (in press), a confirmatory phenomenological analysis was undertaken, in which the hypothesis was tested that the same seven themes found by Minor et al. (in press) would emerge. In order of endorsement level, Minor et al. found the following seven themes to represent characteristics that many of the teacher candidates considered to reflect effective teaching: (a) student-centered (55.2%); (b) effective classroom and behavior manager (33.6%); (c) competent instructor (33.6%); (d) ethical (29.9%); (e) enthusiastic about teaching (23.9%); (f) knowledgeable about subject (19.4%); and (g) professional (15.7%). Onwuegbuzie and Teddlie (in press) termed this procedure a *confirmatory thematic analysis*.

In the current investigation, all seven themes were confirmed. Table 2 presents the endorsement levels (i.e., effect sizes) of the themes that emerged from the students' responses. It can be seen that, similar to the findings reported by Minor et al. (in press), student-centered was the most endorsed theme, with nearly two-thirds of the sample citing one or more traits that fell into this category. This was followed by competent instructor and effective classroom and behavior manager, respectively.

Insert Table 2 about here

As recommended by Onwuegbuzie (2001) and Onwuegbuzie and Teddlie (in press), each theme was *quantitized* (Tashakkori & Teddlie, 1998). That is, for each participant, a score of "1" was given for a theme if it represented at least one of the six stated characteristics; otherwise, a score of "0" was given for that theme. In other words, for each preservice teacher, each theme was quantitized either to a "1" or a "0" depending on whether it was represented by that individual. Such quantitizing allowed each theme to be correlated with other variables (Onwuegbuzie & Teddlie, in press). Onwuegbuzie and Teddlie (in press) termed this technique of determining the relationship between quantitized data and other data as *(mixed methods) data correlation*.

All possible subsets (APS) multiple regression (Onwuegbuzie & Daniel, in press-a; Thompson 1995) was used to identify an optimal combination of the themes (i.e., independent variables) that predicted the difference between the pretest and posttest scores. Using this technique, all possible models involving some or all of the seven independent variables were examined. This method of analysis has been recommended by many researchers (e.g., Onwuegbuzie & Daniel, in press). In APS regression, individual regressions are determined for all independent variables singly, all possible pairs of independent variables, all possible trios of independent variables, and so forth, until the best subset of independent variables is identified according to some criterion. For this study, the criterion used was the maximum proportion of variance explained (R^2), which provides an important measure of effect size (Cohen, 1988).

The APS multiple regression analysis revealed that a model containing only the ethical theme provided the best fit ($F[1, 82] = 4.72$, $p < .05$) to the prediction of the pretest-posttest differences in WTSEB scores. This variable explained 5.4% of the variation in difference scores. Using Cohen's (1988) criteria for assessing the predictive power of a set of independent variables in a multiple regression model, the proportion of variance explained indicates a small effect size because it is less than the 13% cutpoint.

An inspection of the studentized residuals generated from the model (Myers, 1986) suggested that the assumptions of normality, linearity, and homoscedasticity were met. Using the Bonferroni adjustment, none of the studentized residuals suggested that outliers were present. The regression model suggests that, to a small degree, teacher candidates with the largest gains in WTSEB scores from pretest to posttests tended to be those who believed that ethicalness was a characteristic of an effective teacher.

Discussion

The major purpose of this study was to examine trends in teacher candidates' educational beliefs over the course of a semester, that is, after instruction in an introduction to education course has taken place. Participants were asked to complete a measure of educational beliefs during both the first and last weeks of class that required them to consider concepts, practices, and issues of the teaching profession and public schools. The sample members also were asked to identify, to rank, and to define between three and six characteristics that they believe effective teachers possess or demonstrate.

Interestingly, the proportion of teacher candidates who fell in the eclectic range at the

pretest (61.9%) and posttest (60.7%) stages was very similar. Also, the mean posttest WTSEB score of 20.42 still remained in the eclectic range of 17 to 23, as did the mean WTSEB pretest score. Although this may give the impression that the education course did not change the candidates' beliefs, such a conclusion would be extremely misleading. Not only did a significant proportion of students change from an eclectic viewpoint to a progressive one, a large proportion of teacher candidates also changed from a transmissive orientation to an eclectic one–the latter, like the former, also indicates a proclivity toward progressivism. Specifically, by the end of the course, the teacher candidates tended to experience a shift toward progressivism. Indeed, of candidates who were classified as eclectic at the pretest stage, 19.2% were categorized as progressive at the end of the course. Further, of those who fell into the transmissive category at the pretest stage, 67.7% were categorized either as eclectic (61.9%) or progressive (4.8%) at the end of the course. Moreover, a statistically significant increase in belief scores over time was found, with a moderate effect size.

As such, the present investigation has made an important contribution to the literature base because it is the first to demonstrate that instruction has the potential to change teacher candidates' educational beliefs from transmissive to a more progressive orientation. However, it should be noted that cause-and-effect conclusions cannot be made at this stage due to the correlational nature of this study. Thus, replications are needed using an experimental research design in order to assess the reliability of the trend found. In particular, a control group is recommended in future investigations consisting of freshmen who do not take any education courses in their first semester, for the purpose of determining whether a shift from transmissivism to progressivism occurs regardless of whether the student completes an educational course. More specifically, such a control group would help to rule in or to rule out some rival explanations to the tentative conclusions made in the present study (Onwuegbuzie, in press). In particular, a control group would help educators and researchers alike to evaluate whether any changes that occur in educational beliefs are the result of maturation, history, and/or statistical regression (Onwuegbuzie, in press).

It should be noted that the instructor of the education course, who also completed the WTSEB, had a progressive orientation. Thus, a natural question that subsequent studies should address is whether teacher candidates who are taught by an instructor with either a transmissive or an eclectic orientation would still exhibit a shift toward progressivism. Indeed, a 2 x 2 (randomized) block design could be used, in which two groups of students (students enrolled in an educational course in their first semester vs. students not enrolled in any educational courses in their first semester) are taught separately by two types of education instructors (transmissive vs. progressive). By crossing these two variables (i.e., student group and type of instructor), a researcher would be able to determine the individual contributions of education curricula and teacher philosophy in shaping the educational beliefs of teacher candidates. This design also would allow an interaction between these two variables to be tested formally within the context of an analysis of variance. Indeed, as noted by Onwuegbuzie (in press):

> Many researchers neglect to assess the presence of interactions when testing hypotheses. By not formally testing for interactions, researchers may be utilizing a model that does not honor, in the optimal sense, the nature of reality that they want to study, thereby providing a threat to internal validity at the data analysis stage. (p. 37)

A multiple regression analysis, using the posttest-pretest difference educational belief scores as the dependent variable, revealed that teacher candidates who believed that ethicalness was a foremost characteristic for teachers to possess tended to experience the

greatest shift toward progressivism. This finding may have stemmed from the fact that an important component of the course objectives, which was based on the INTASC (1992) standards, was the delineation of political, legal, and ethical issues in education. Thus, qualitative techniques should be used to determine how discussing political, legal, and ethical aspects of education might play a role in making teacher candidates more progressive over time.

Finally, future investigations are needed to determine other predictors of change in teacher beliefs over time. Variables that could be examined include gender, race, and age. Unfortunately, in the present inquiry, the predictive power of the demographic variables (i.e., gender and race) could not be tested because the sample was very homogenous (i.e., a relatively small proportion of males and minority teacher candidates). In any case, clearly, much more research is needed in the area of teacher beliefs.

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Table 1

Means and Standard Deviations for Pretest and Posttest WTSEB Scores (n = 84)

WTSEB Administration	*M*	*SD*
Pretest	19.23	4.34
Posttest	20.42	3.86

Table 2

Themes Emerging from Teacher Candidates' Perceptions of the Characteristics of Effective Teachers

Theme	Endorsement Rate (%)
Student-centered	55.2
Competent instructor	39.3
Effective classroom and behavior manager	36.9
Enthusiastic about teaching	26.2
Ethical	23.8
Knowledgeable about subject	16.7
Professional	13.1